

This diagram shows a cross-section of a semiconductor device. It features two vertical regions labeled 21 and 22. Between them are two main transistor structures. The left structure includes a PMOS transistor (labeled 11) and an NMOS transistor (labeled 12). They share a common gate stack (labeled 7). The PMOS gate is connected to a horizontal line (labeled 27), and the NMOS gate is connected to another horizontal line (labeled 28). A central vertical line (labeled 19) passes through the center of the device. Various other components are labeled with numbers like 15, 17, 24, 26, and 28. Input and output terminals are indicated by arrows at the bottom, labeled INPUT and OUTPUT. A dashed line L1 is shown on both sides.

FIG. 3

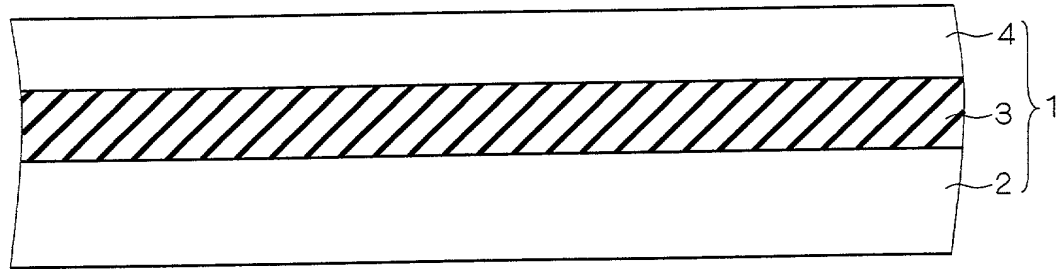


FIG. 4

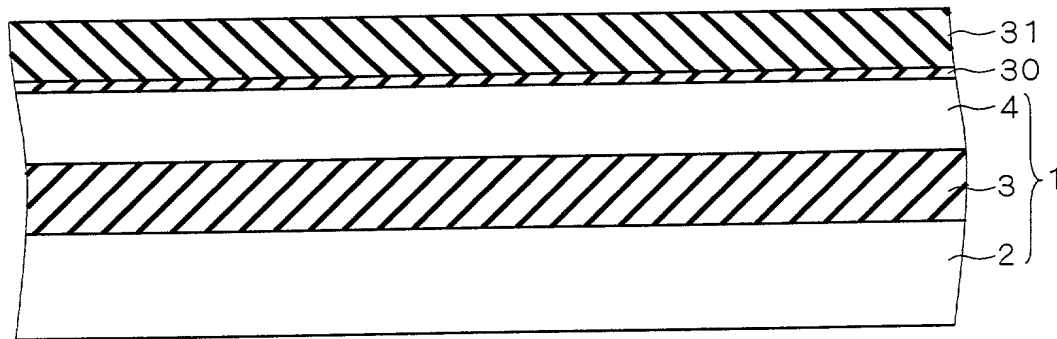


FIG. 5

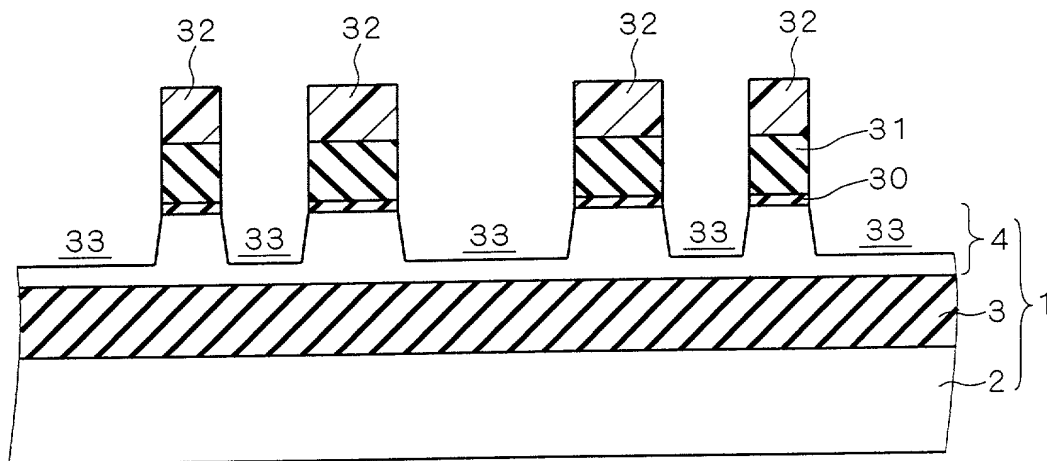


FIG. 6

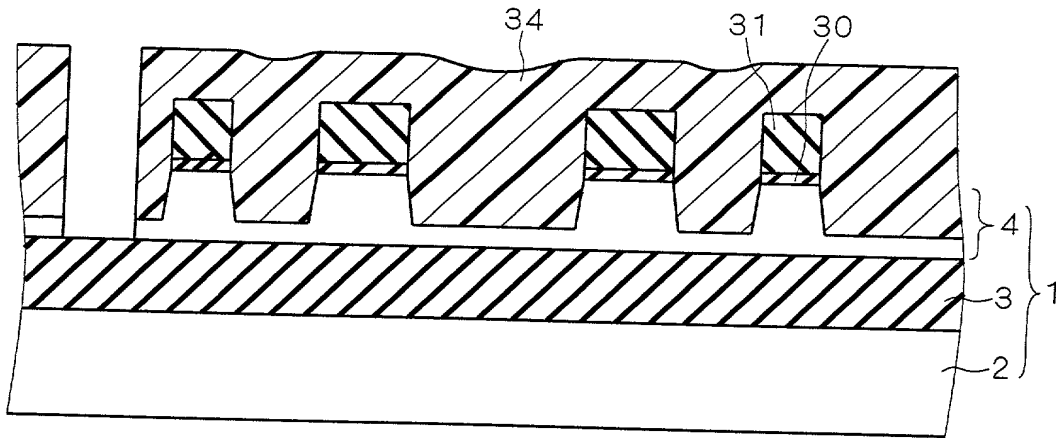


FIG. 7

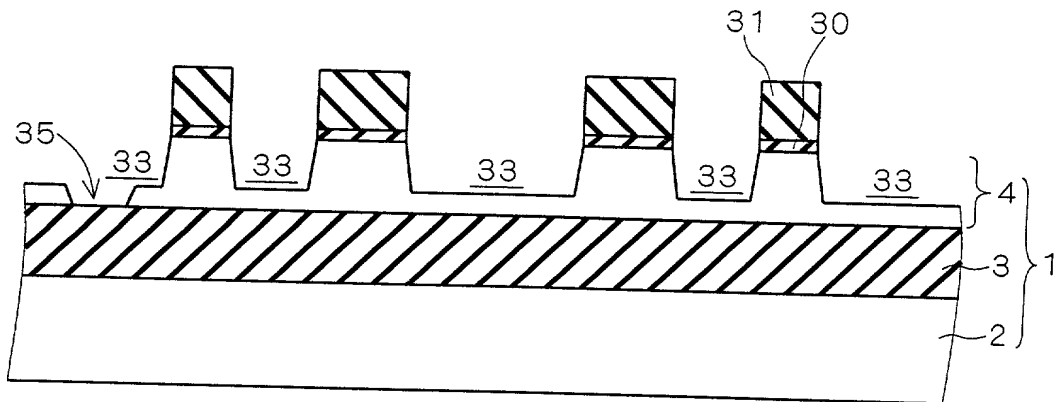


FIG. 8

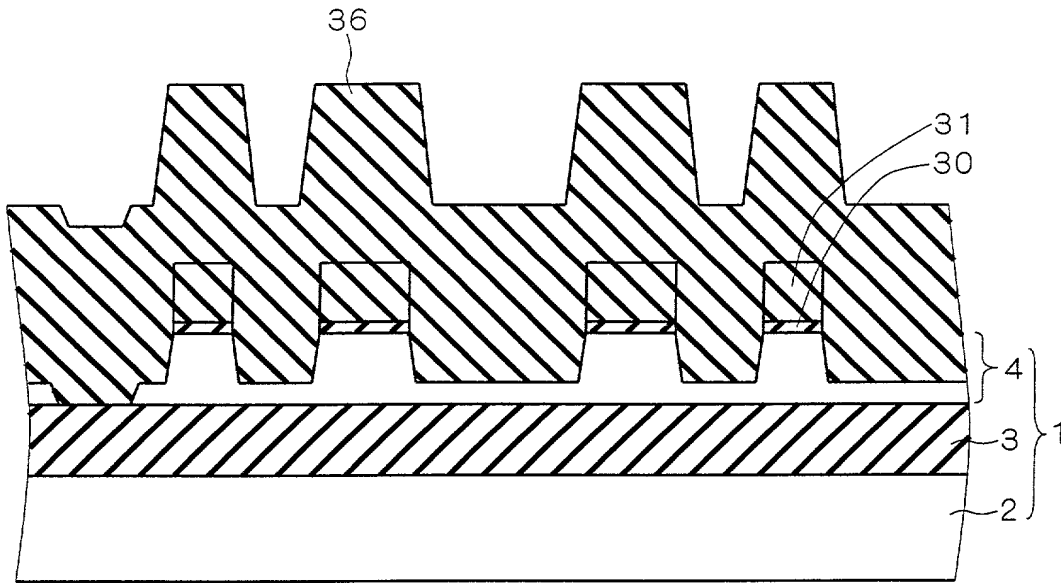


FIG. 9

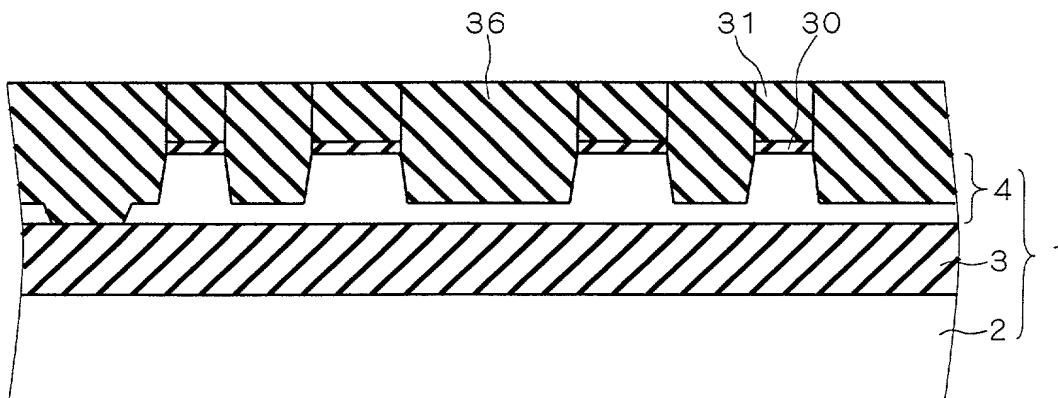


FIG. 10

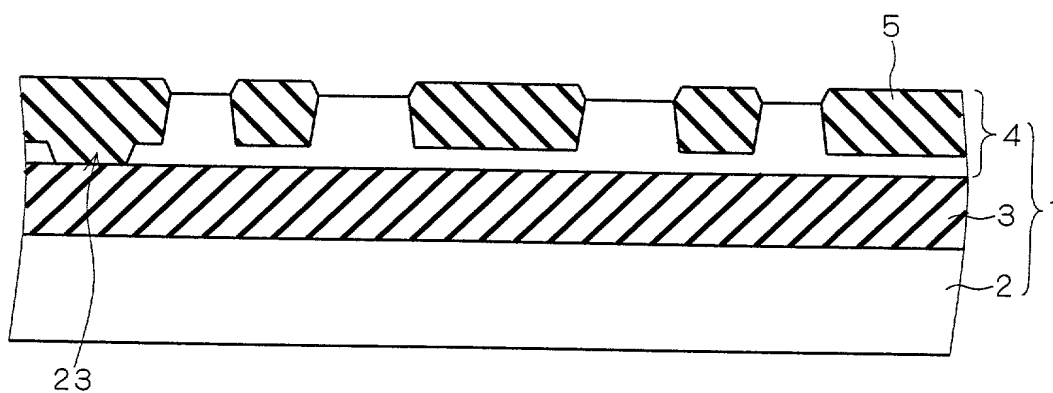


FIG. 11

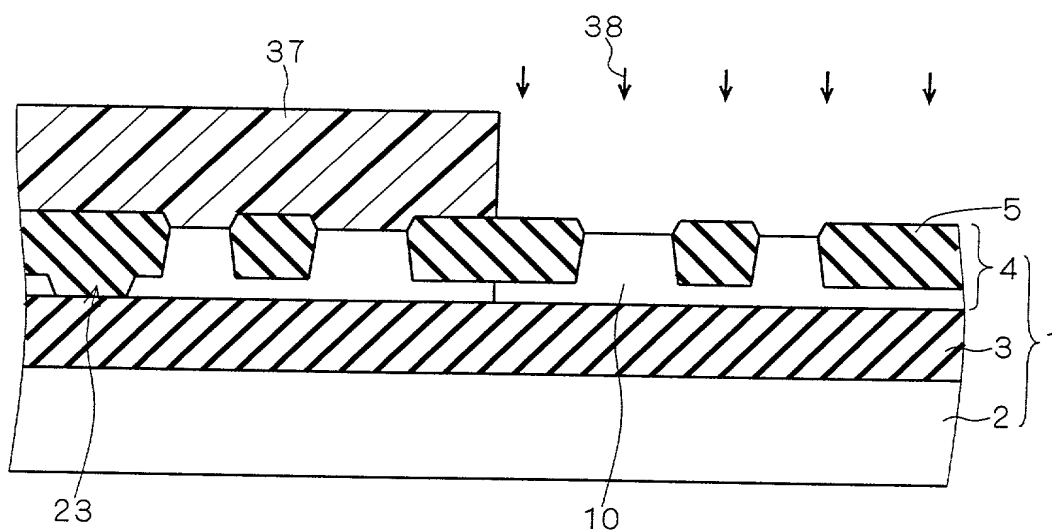


FIG. 12

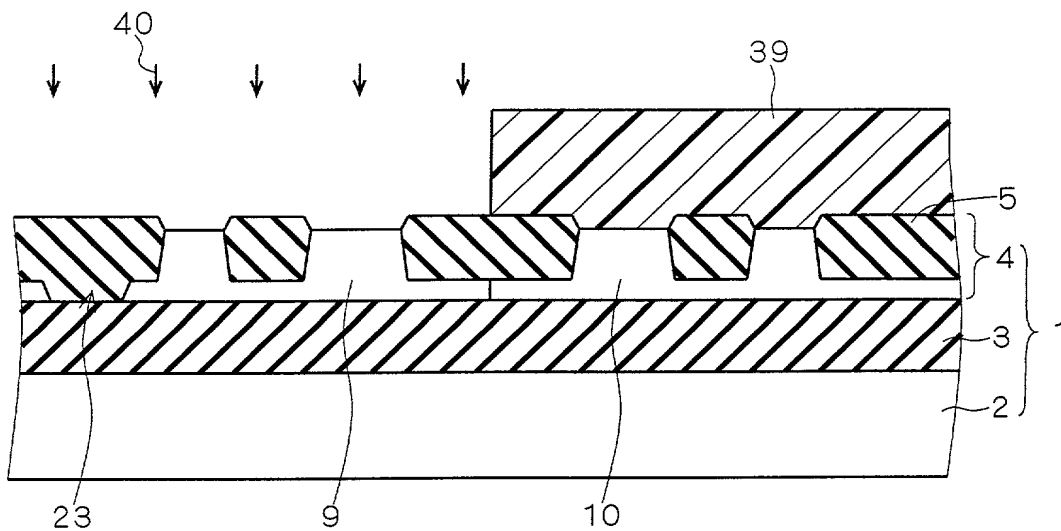


FIG. 13

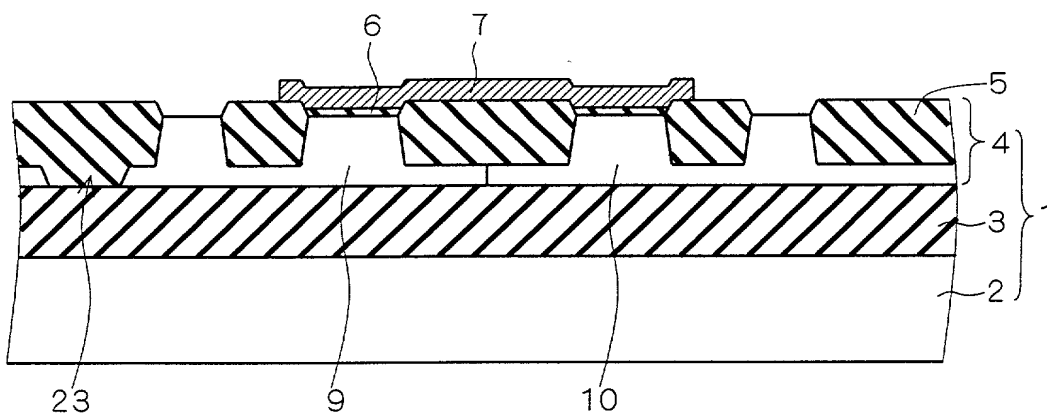




FIG. 16

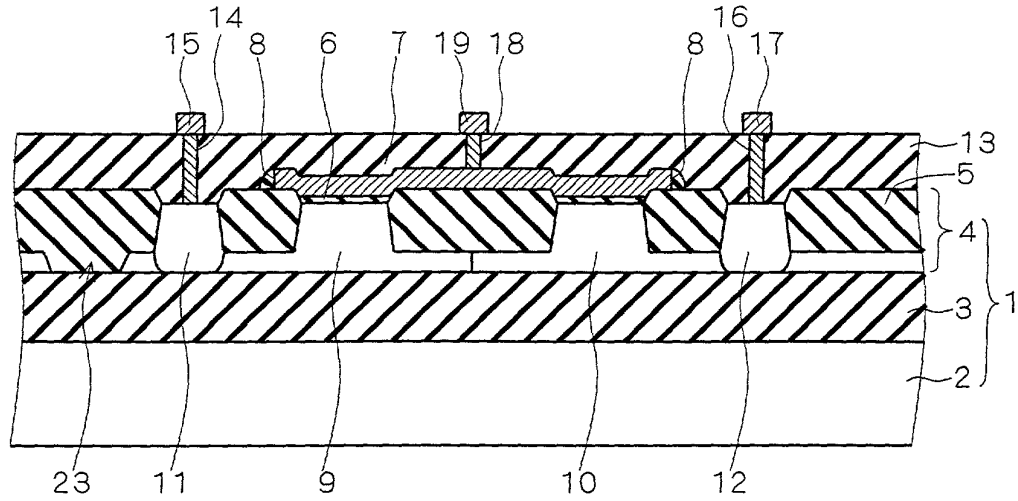


FIG. 17

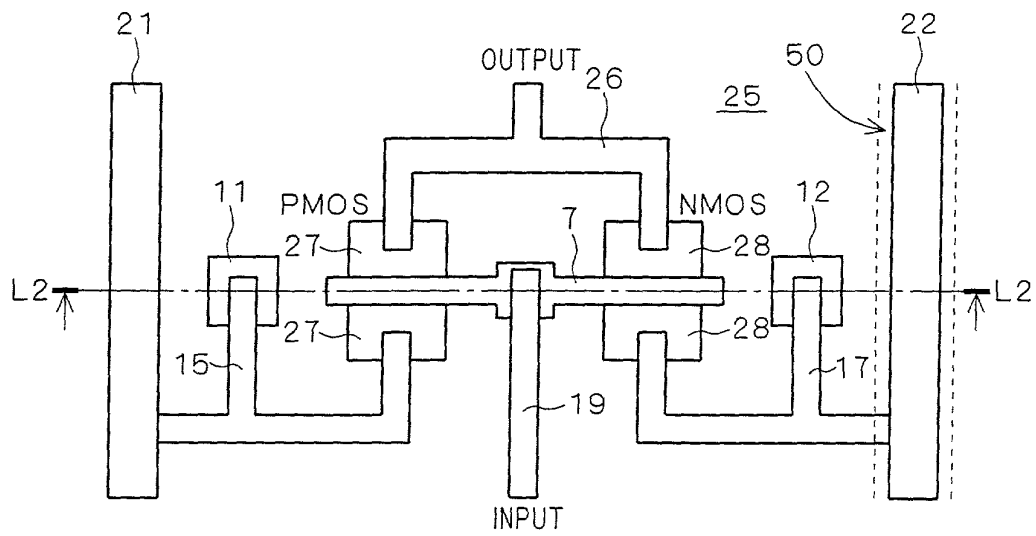




FIG. 18

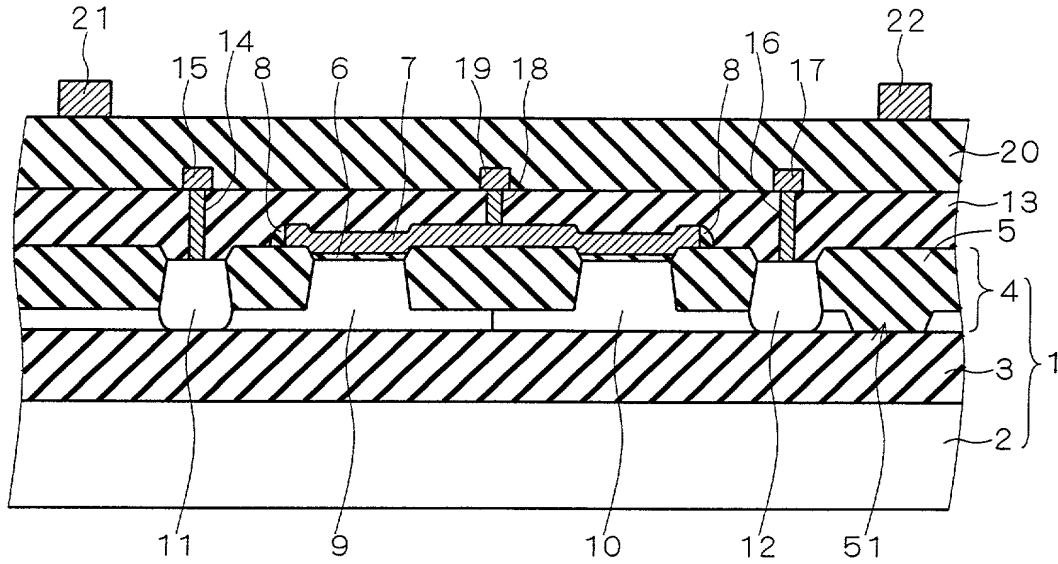
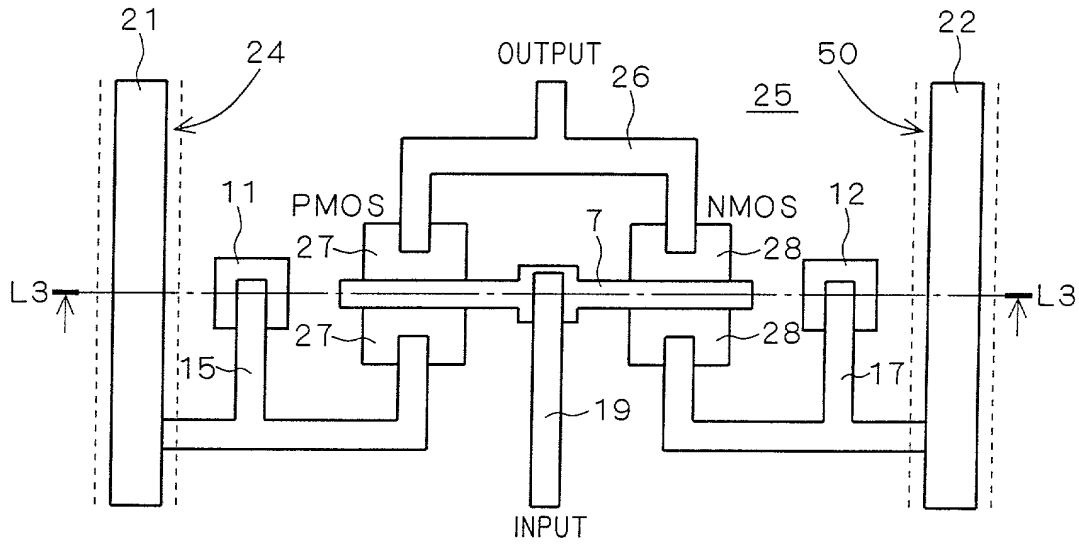


FIG. 19





*F / G. 23*

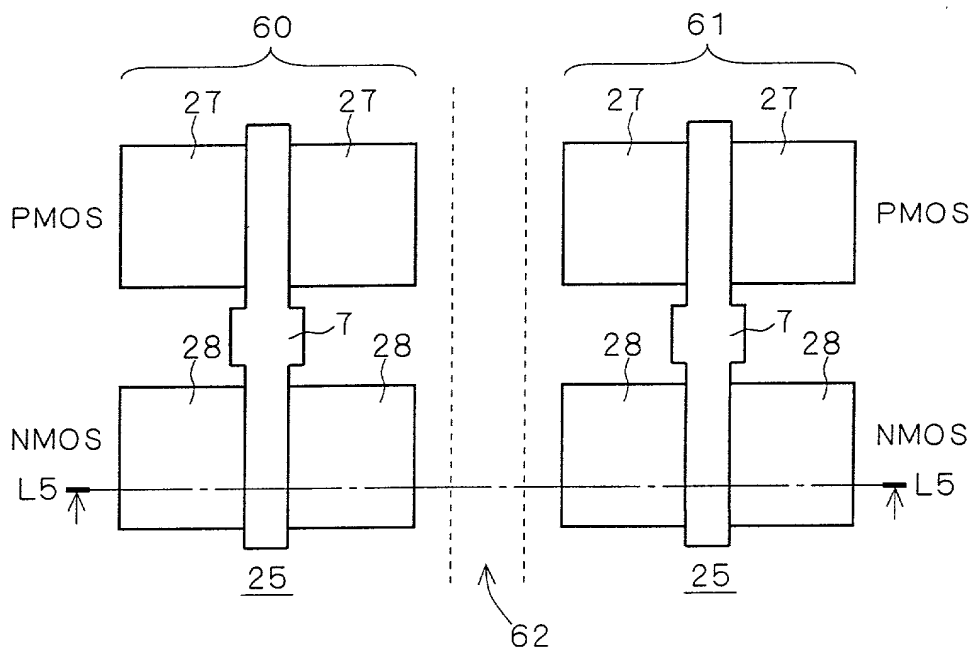


FIG. 24

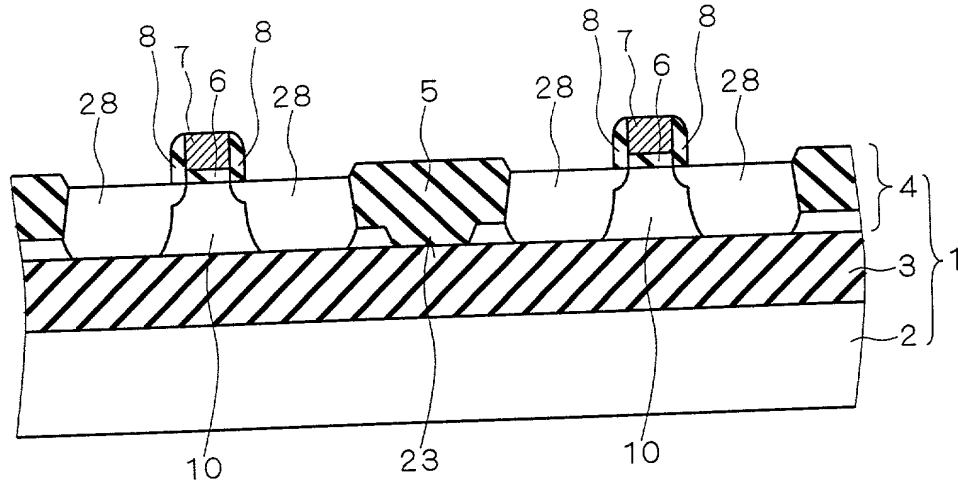


FIG. 25

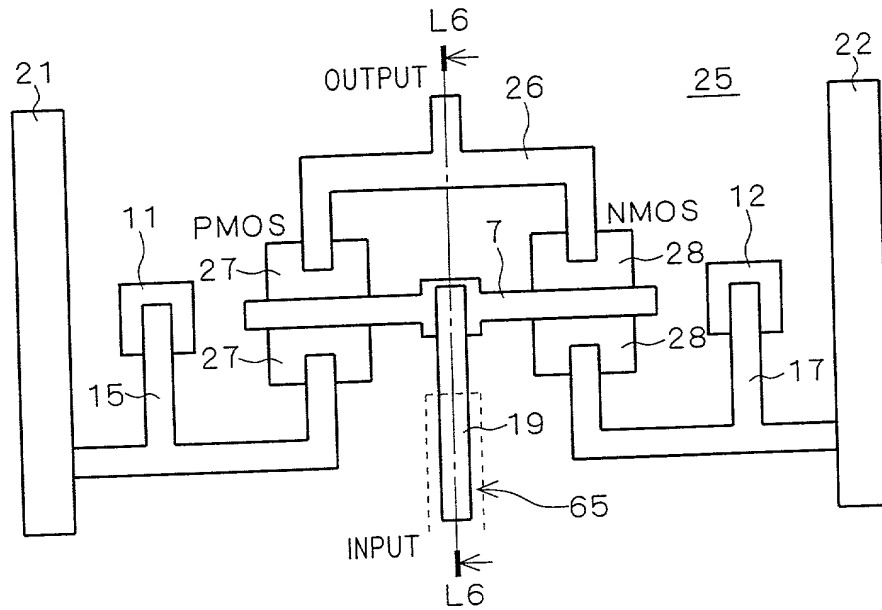


FIG. 26

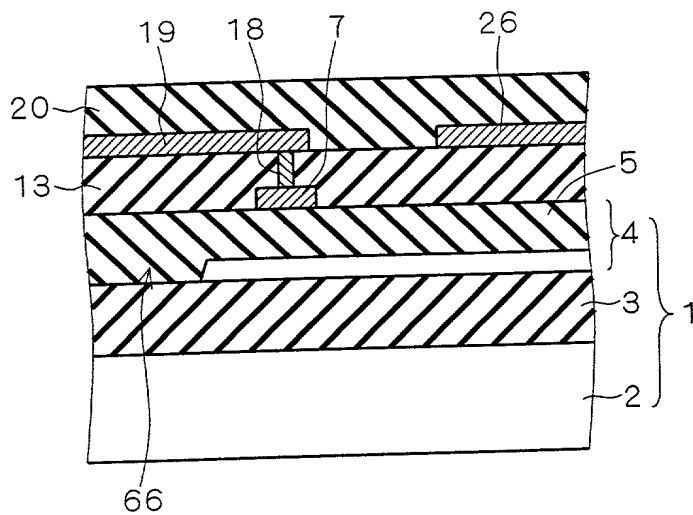


FIG. 27 (A)

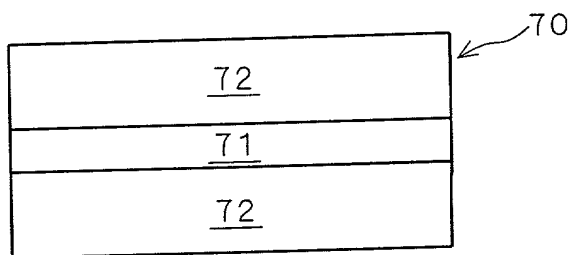


FIG. 27 (B)

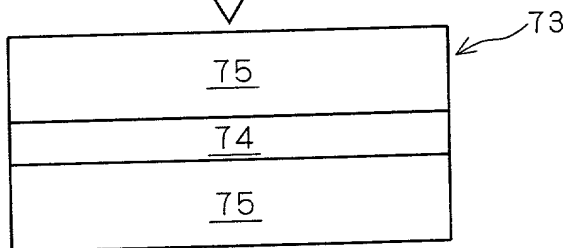


FIG. 28

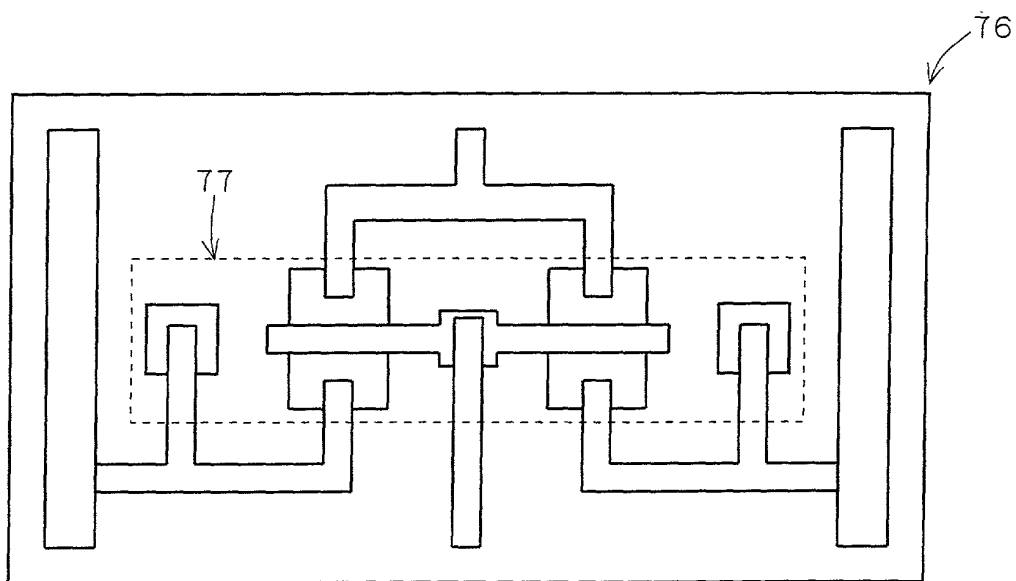


FIG. 29

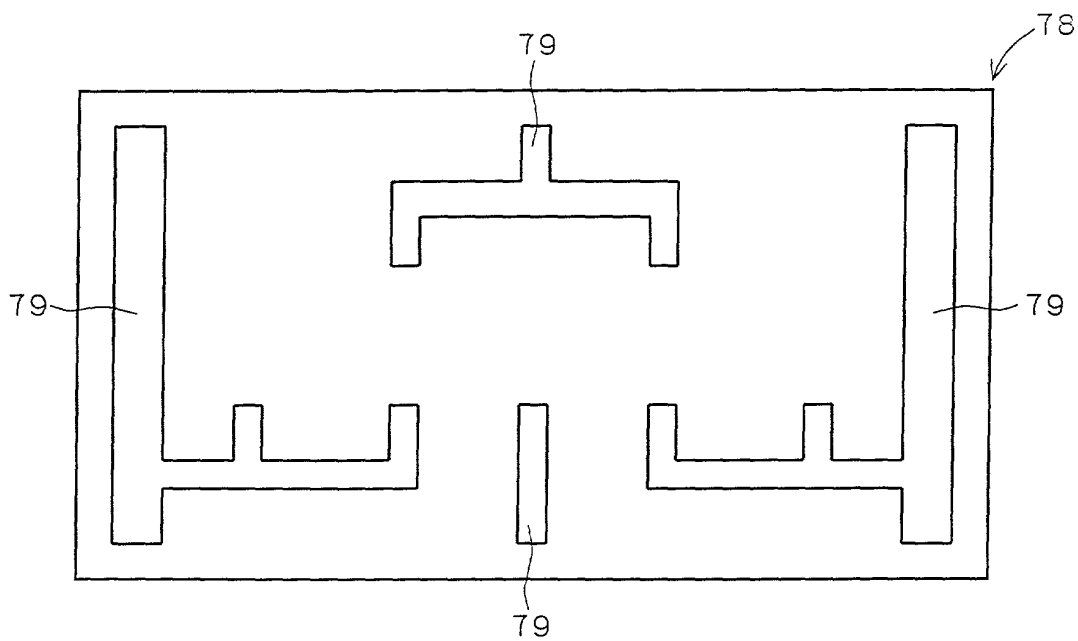
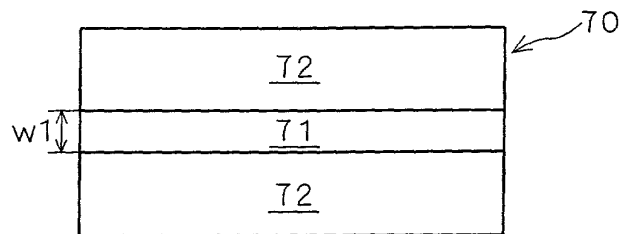
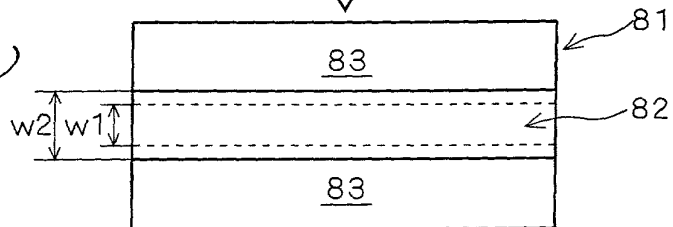


FIG. 30 (A)



↓ LOGIC INVERSION

FIG. 30 (B)



↓

FIG. 30 (C)

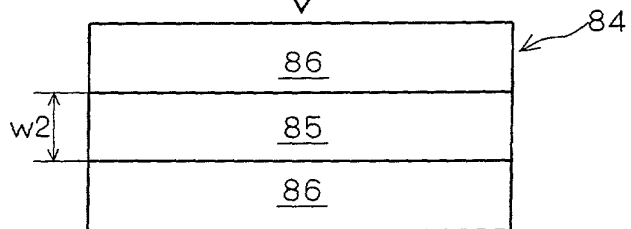


FIG. 31

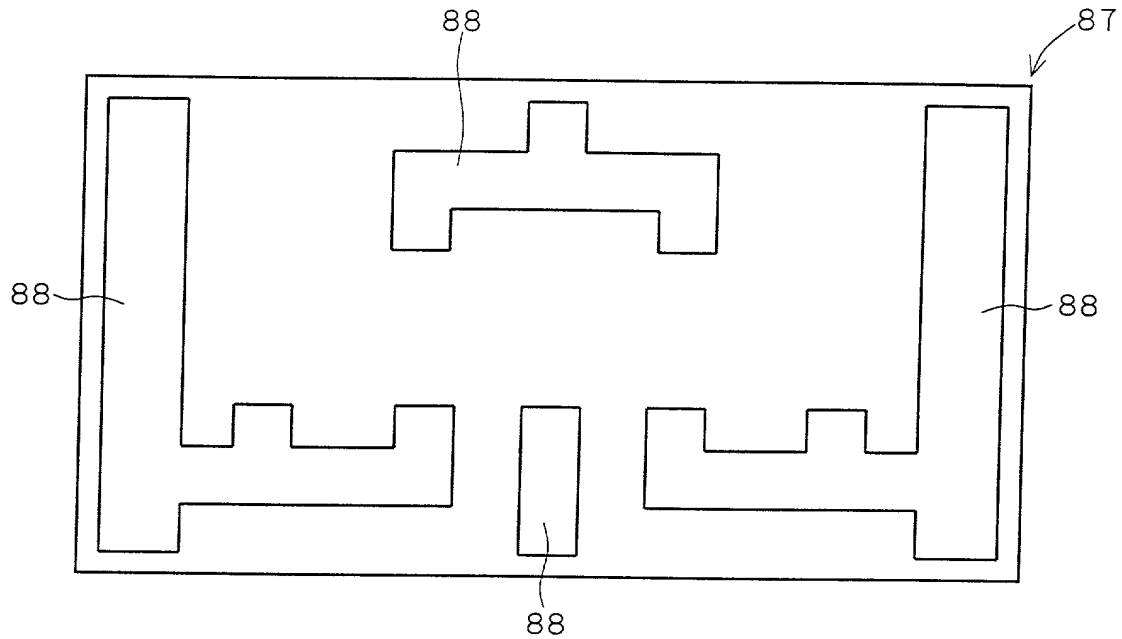


FIG. 32

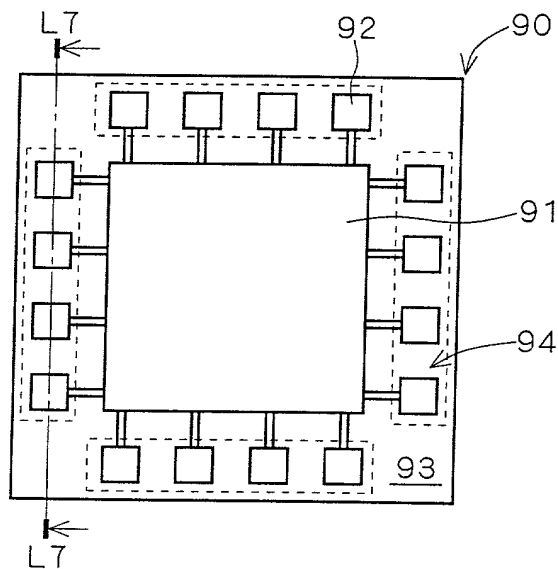




FIG. 33

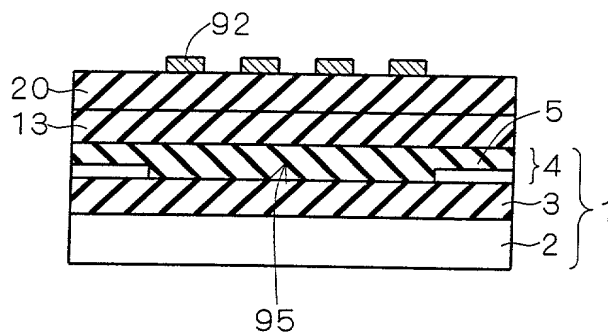


FIG. 34

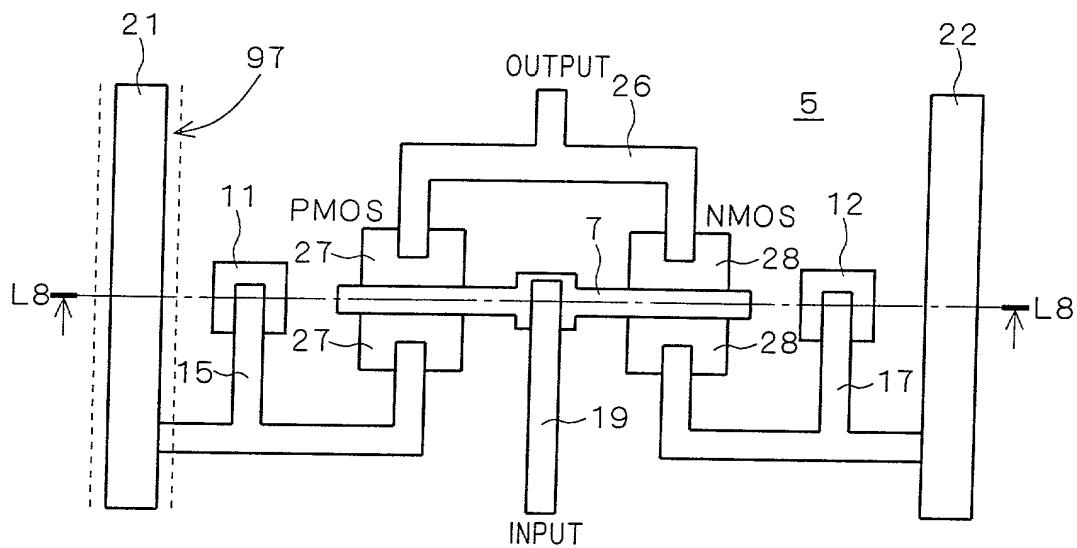


FIG. 35

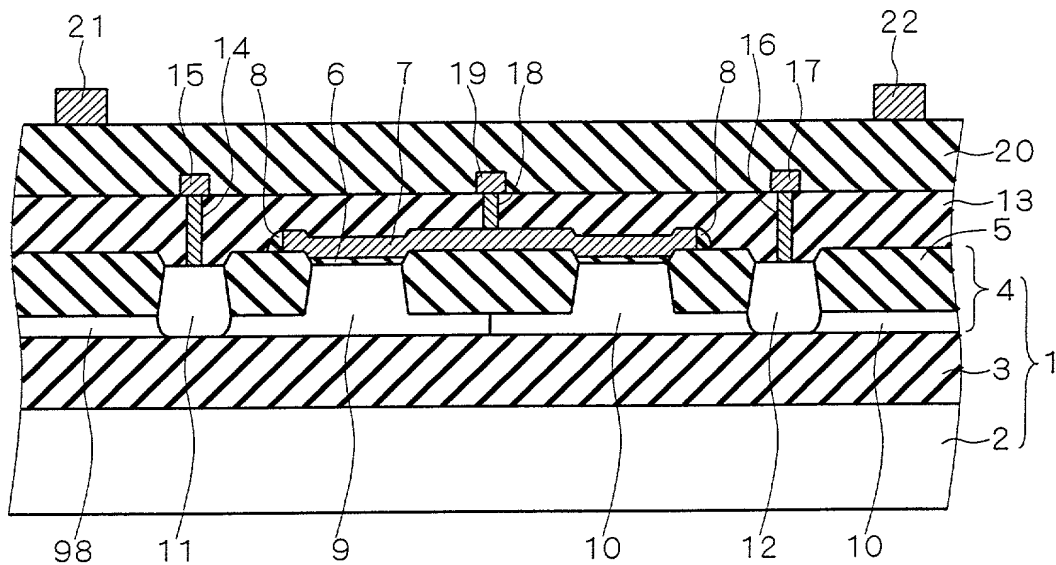


FIG. 36

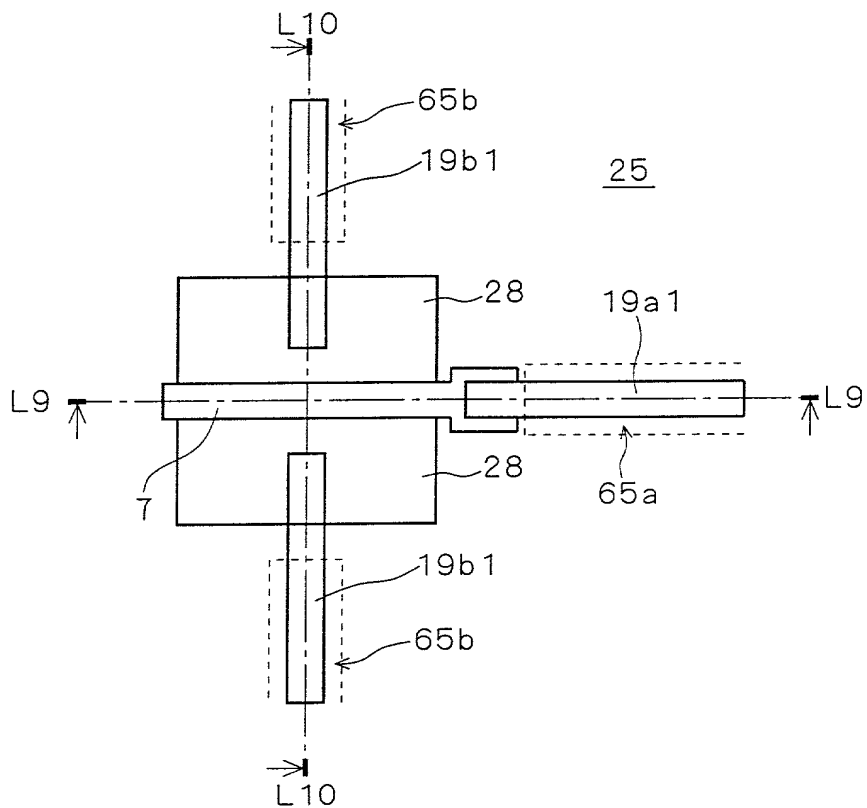


FIG. 37

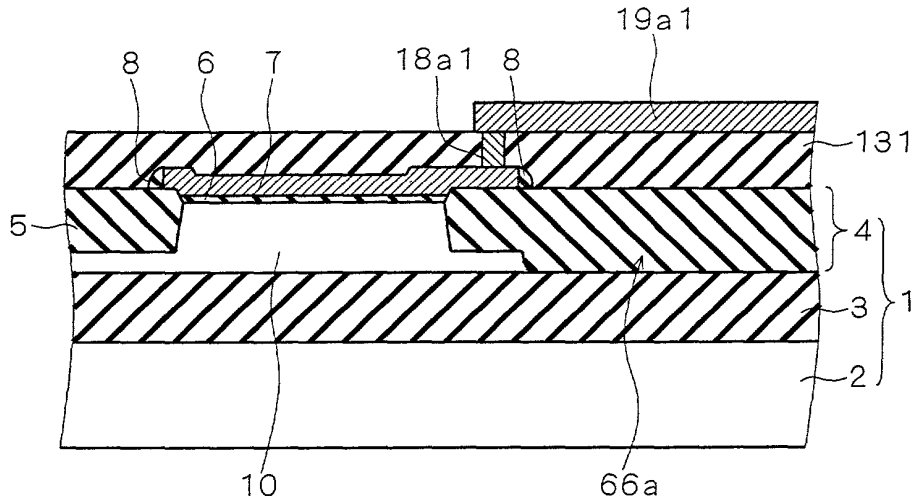


FIG. 38

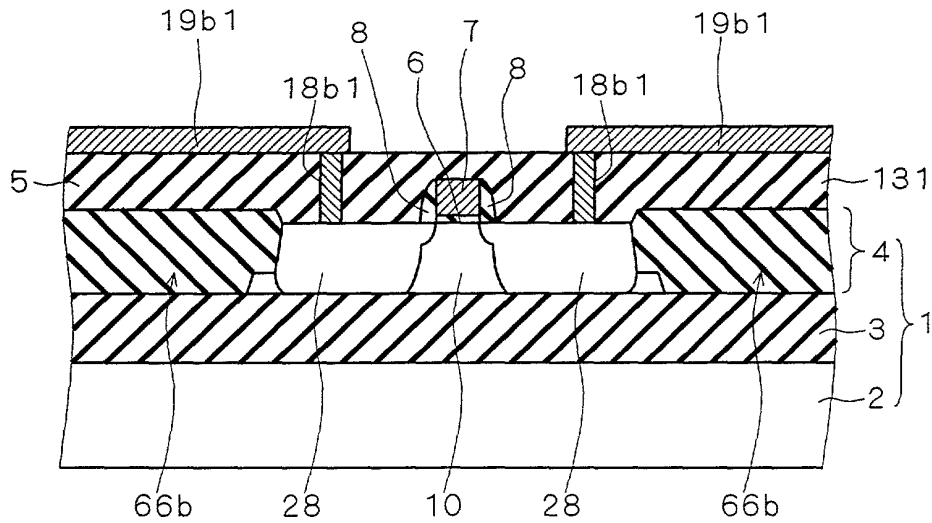


FIG. 39

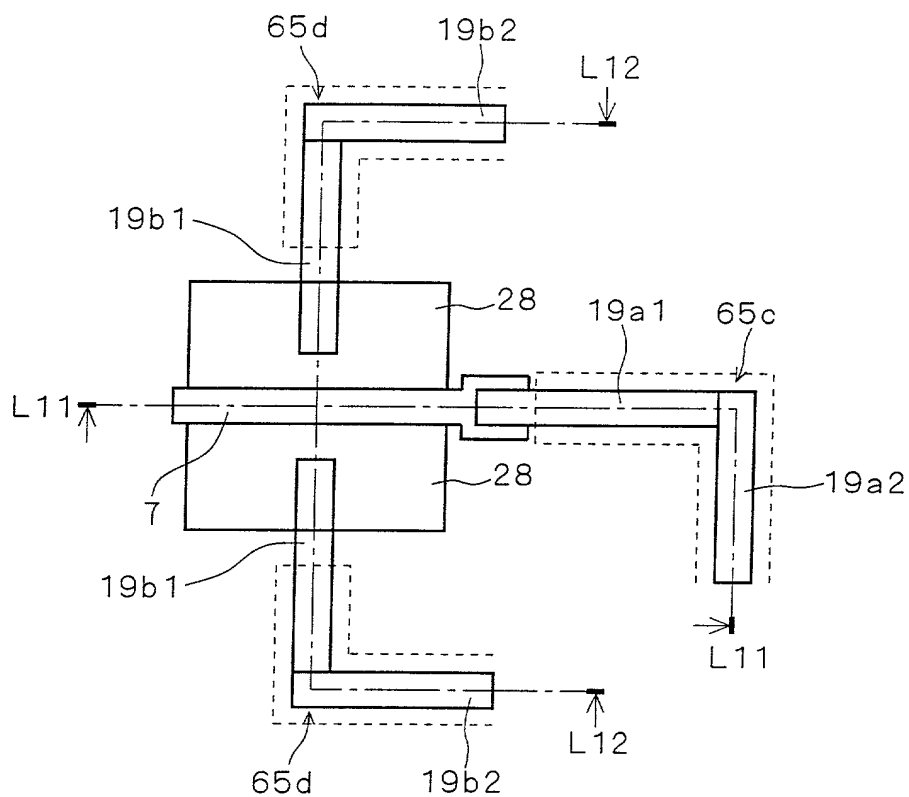


FIG. 40

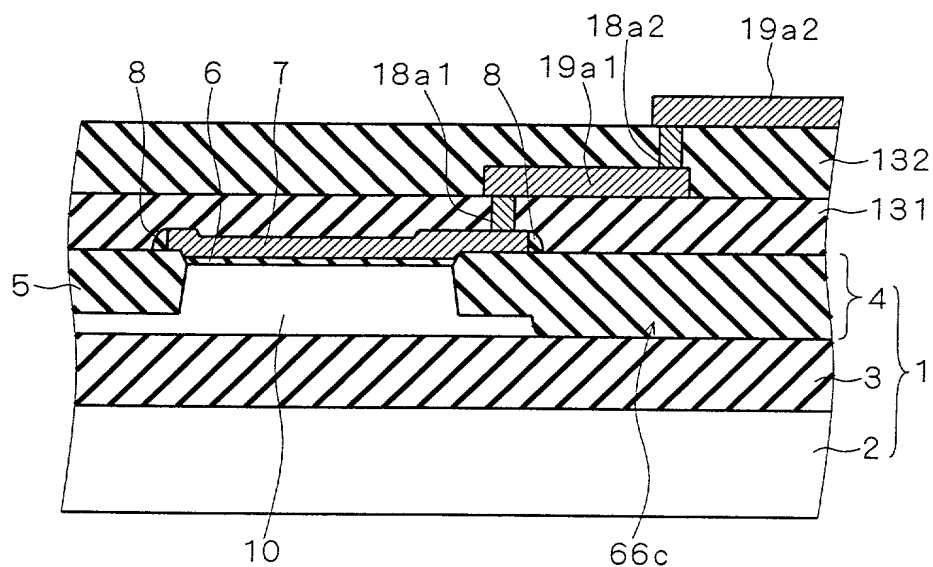


FIG. 41

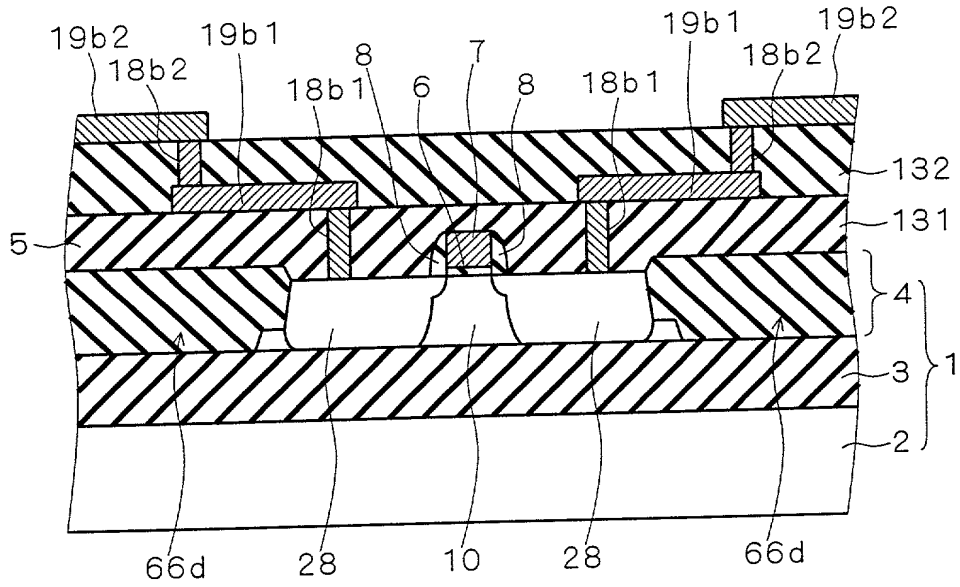


FIG. 42

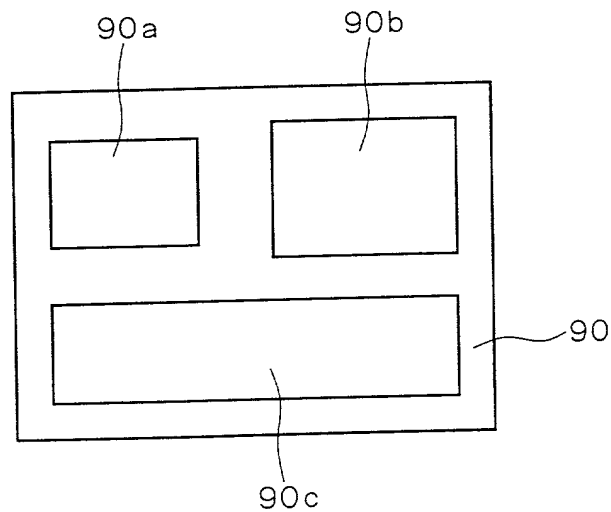


FIG. 43

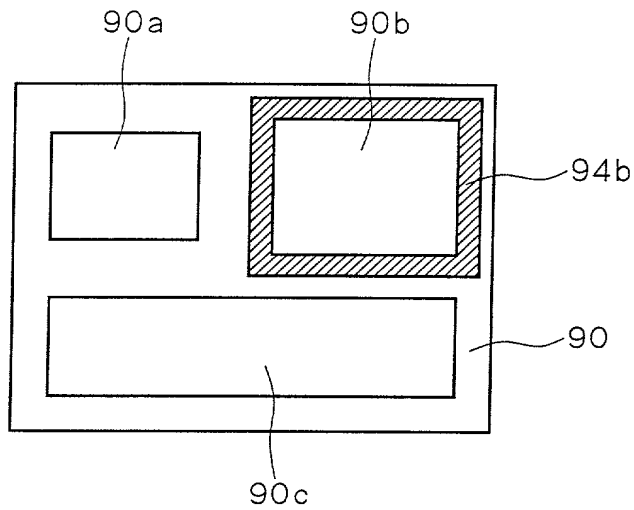
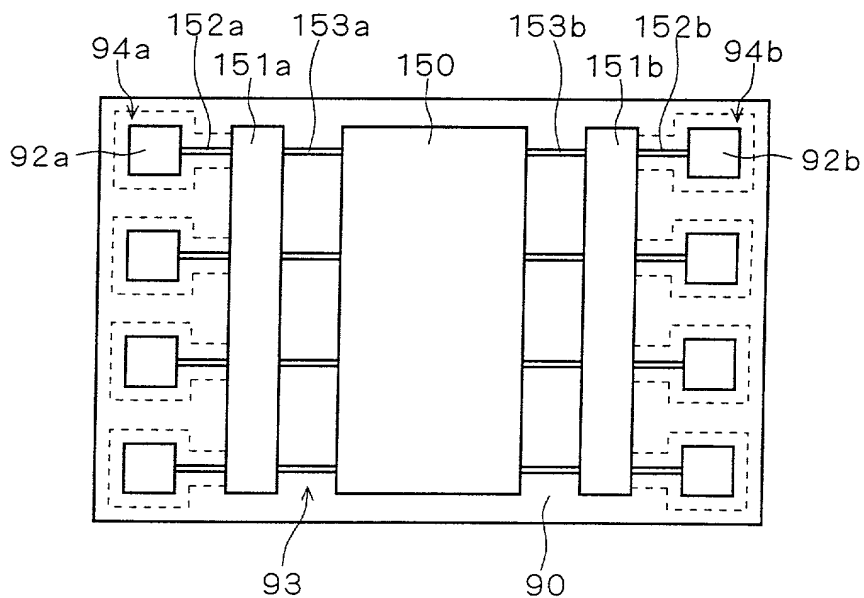


FIG. 44





This cross-sectional diagram illustrates a multi-layered semiconductor structure. At the base is a substrate layer labeled 102. Above it are several patterned layers collectively designated by bracket 101, which include layers 103, 104, and 105. Layer 104 contains recessed regions filled with material 111. A middle layer, likely a gate dielectric or spacer, is labeled 120. Above this are additional layers 121 and 112. The top surface features various patterns and contacts, including regions labeled 115, 114, 118, and 119. Vertical structures or vias are indicated by labels 107, 108, 116, and 117. Specific contact points or openings at the bottom of the structure are labeled 109d, 110, and 109s.

Diagram 100 is a cross-sectional view of a semiconductor device. It shows two gate structures, 140 and 141, separated by a central region 105. Each gate structure 140 and 141 consists of a PMOS region, a central gate stack 107, and NMOS regions 109. A dashed line L100 indicates a common level across the device, with arrows pointing to the NMOS regions 109.



FIG. 49

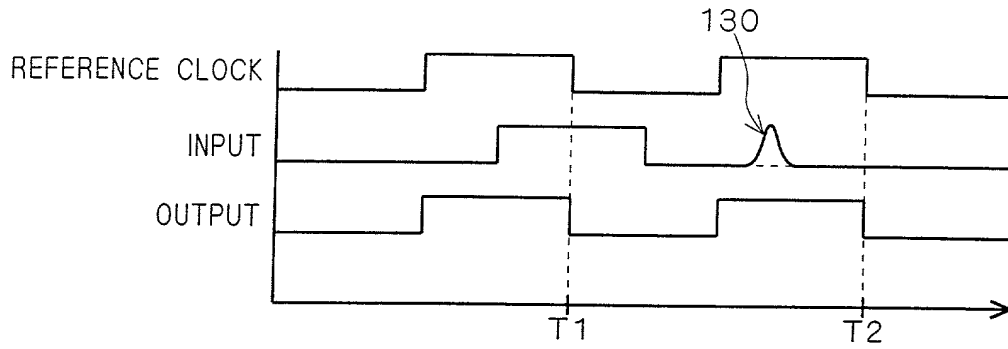


FIG. 50

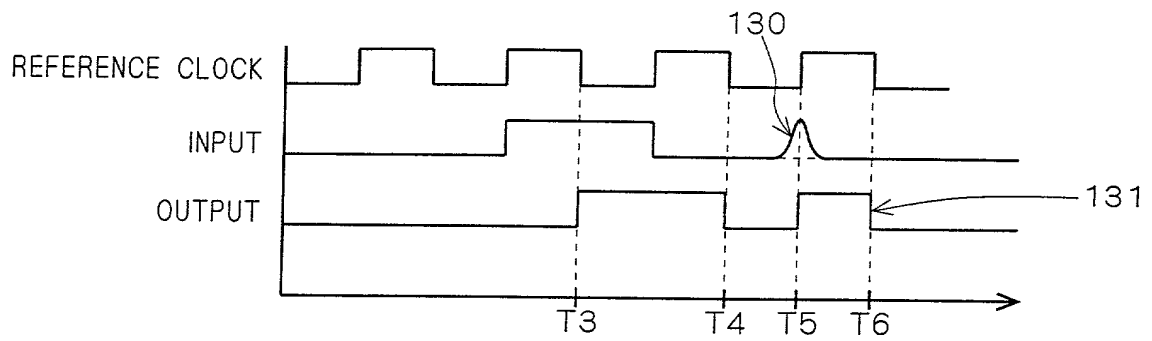


FIG. 51

